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09/746,228	12/26/2000	Toshitaka Nakamura	N02-125045M/KOH	1148

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MCGINN & GIBB, PLLC
8321 OLD COURTHOUSE ROAD
SUITE 200
VIENNA, VA 22182-3817

EXAMINER	
MARKHAM, WESLEY D	
ART UNIT	PAPER NUMBER
1762	

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action	Application N .	Applicant(s)
	09/746,228	NAKAMURA ET AL.
	Examin r	Art Unit
	Wesley D Markham	1762

--The MAILING DATE of this communicati n app ars on the cover sheet with th correspondence address --

THE REPLY FILED 26 November 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2. ☐ The proposed amendment(s) will not be entered because:

   (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);

   (b) ☐ they raise the issue of new matter (see Note below);

   (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.

4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☒ The a)☐ affidavit, b)☐ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: *see attached Office Action*.

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7. ☒ For purposes of Appeal, the proposed amendment(s) a)☐ will not be entered or b)☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:

   Claim(s) allowed: _____.

   Claim(s) objected to: _____.

   Claim(s) rejected: *13-28*.

   Claim(s) withdrawn from consideration: _____.

8. ☒ The drawing correction filed on *08 November 2002* is a)☒ approved or b)☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10. ☐ Other: _____

WDM

DETAILED ACTION / ADVISORY ACTION

Response to Amendment

Acknowledgement is made of the request for reconsideration filed by the applicant on 11/26/2003. The applicant is thanked for providing a complete listing of the claims of the instant application. Claims 13 – 28 are currently pending in U.S. Application Serial No. 09/746,228, and an Advisory Action follows.

Response to Arguments

1. Applicant's arguments filed on 11/26/2003 have been fully considered but they are not persuasive.
2. Regarding the 35 U.S.C. 103(a) rejections based on Anzaki et al., the applicant attempts to rebut the *prima facie* case of obviousness by showing the criticality of / unexpected results for the claimed substrate temperature range of 340 K to 390 K, as recited in independent Claims 13 and 14. In response, the examiner notes that the prior art, specifically Anzaki et al., teaches a substrate temperature of 573 K or lower, a range which completely encompasses the applicant's claimed temperature range. Further, the examiner notes that, in order to rebut a *prima facie* case of obviousness by establishing criticality / unexpected results, the results (i.e., the evidence of non-obviousness) must be commensurate in scope with the claims which the evidence is offered to support (See MPEP 716.02(d); *In re Clemens*, 206 USPQ 289, 296 (CCPA 1980); and *In re Grasselli*, 218 USPQ 769, 777 (Fed. Cir. 1983)). This is not the case in the instant application. First, the examiner notes that

samples (1) – (4) were produced using temperatures within the applicant's claimed range, while samples (5) – (8) were produced using temperatures outside the applicant's claimed range. However, the lowest temperature tested within the applicant's claimed range was 353 K (sample (2)). Temperatures tested below 353 K include 333 K (sample (5)) and 303 K (sample (6)), both of which are outside the applicant's claimed range. As such, why is 340 K the critical low-end cutoff point for substrate temperatures? The examiner notes that the low end of the claimed range (i.e., 340 K) is much closer to 333 K (i.e., a temperature which gives undesirable results according to the applicant) than to 353 K (i.e., a temperature which gives desirable results according to the applicant). As such, how does the applicant know that temperatures between 340 K and 353 K give the desired results (i.e., are "critical")? Therefore, this showing of criticality / unexpected results is not commensurate in scope with the claims of the instant application. Second, the examiner notes that independent Claims 13 – 14 are drawn to depositing the silver films by any vacuum dry process (e.g., vacuum vapor deposition, ion plating, sputtering), while the results shown in samples (1) – (8) were obtained using a sputtering method only (see page 26 of the applicant's specification). Thus, the results are not commensurate in scope with the claims. Third, the examiner notes that independent Claims 13 – 14 are open to a number of different silver-containing films, such as silver and one member or two or more members selected from the group consisting of gold, copper, palladium, platinum, manganese, and cadmium (see pages 20 – 21 of the applicant's specification and page 11 of the applicant's

remarks filed on 4/29/2002), while the results shown in samples (1) – (8) were obtained using only silver containing 5% by weight of gold (see page 25, line 25, and page 26, lines 1 – 3 of the applicant's specification). Therefore, the results are not commensurate in scope with the claims. Fourth, the applicant's claims are open to any number of combination thin film layers greater than or equal to three so long as a transparent laminate is produced, while the results shown in samples (1) – (8) were only obtained for three combination thin film layers. Thus, the results are not commensurate in scope with the claims. The applicant relies upon the processes described in the specification to show "unexpected results". The claims must be commensurate in scope with the showing of unexpected results, and therefore commensurate in scope with the processes described in the specification used to show the unexpected results. How does the applicant know that the claimed temperature range is critical for vacuum dry processes other than sputtering? How does the applicant know that the claimed temperature range is critical for different alloys of silver than the one tested? The applicant has provided no data to support a showing of unexpected results commensurate in scope with the claims.

3. Second, the applicant argues that the examiner can point to no motivation or suggestion in the references to modify the Anzaki et al. reference as alleged by the examiner. In response, the only "modification" made to the Anzaki et al. reference alone is the selection of a portion of the disclosed temperature range that corresponds to the applicant's narrower, claimed temperature range. Please note that, in the case where the claimed ranges "overlap or lie inside ranges disclosed by

the prior art", a *prima facie* case of obviousness exists (*In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ 2d 1934 (Fed. Cir. 1990)).

4. Third, the applicant argues that one of ordinary skill in the art would not have combined Anzaki et al. and Okamura et al., absent hindsight, because the references are directed to completely different matters and problems. In response, the examiner strongly disagrees with the applicant's position. Both Anzaki et al. and Okamura et al. are drawn to methods of making a transparent laminate that has excellent electromagnetic wave shielding characteristics so as to function as a filter for a plasma display panel. Both Anzaki et al. and Okamura et al. produce the filter using almost identical processes (i.e., sputtering alternating layers of a silver transparent conductive thin film and a high-refractive index dielectric thin film). As such, the references are directed toward similar matters and problems, not different matters and problems as alleged by the applicant. The applicant's assertion that the laminate disclosed by Anzaki et al. is an improvement over the laminate disclosed by the Okamura et al. reference, even if valid, does not in any way preclude the references from being combined in the manner suggested by the examiner.
5. Fourth, the applicant argues that the Okamura et al. reference does not teach or suggest that a low-refractive index anti-reflection (AR) coating is any better than any other AR coating, and therefore there would have been no motivation to substitute the anti-reflection coating of Anzaki et al. with a low-refractive index AR coating disclosed in Okamura et al. because there is no benefit to be obtained. In response,

the selection of a known material, in this case the low-refractive index AR coating material(s) taught by Okamura et al., based on its suitability for its intended use, in this case as an anti-reflective surface treatment taught generally by Anzaki et al., supports a *prima facie* case of obviousness (See MPEP 2144.07). In other words, Okamura et al. teach a specific type of coating (i.e., a low-refractive index coating) that can be successfully used as an AR coating in the production of a PDP filter. It would have been obvious to one of ordinary skill in the art to utilize this specific coating as the "antireflective surface treatment" taught generally by Anzaki et al. because it is suitable for this intended use. 35 U.S.C. 103(a) does not require some specific benefit in order to properly combine prior art references – there must only be a reason, suggestion, or motivation to combine the references. In this case, the reason to combine the references in the manner done so by the examiner is that Anzaki et al. clearly desire some sort of "antireflective surface treatment", and Okamura et al. teach a known, specific type of "antireflective surface treatment" (i.e., a low-refractive index coating) that is suitable for use in PDP filters.

6. Fifth, the applicant argues that Anzaki et al. does not teach or suggest applying a low-refractive index thin film before any high-refractive index thin film is deposited. In response, the examiner disagrees. Anzaki et al. explicitly teach applying an "antireflective surface treatment" to the surface of the transparent substrate having no electromagnetic wave shield film (Col.6, lines 32 – 34), which is equivalent to applying the "antireflective surface treatment" before any high-refractive index thin film is deposited, as claimed by the applicant.

7. Sixth, the applicant argues that Anzaki et al. would not have been combined with Noreika et al., Nulman, and/or Shiroishi et al. because the references are directed to completely different matters and problems. Specifically, the applicant states that the Noreika et al. reference is directed to the formation of semiconductor materials for use with microwave devices, and including such materials in the transparent laminate of Anzaki et al. would destroy the intended purpose of the laminate (i.e., render it non-transparent). In response, the examiner has not stated or argued that it would have been obvious to utilize the semiconductor materials of Noreika et al. in the transparent laminate of Anzaki et al. Noreika et al. has simply been cited by the examiner to show that the deposition rate in a sputtering process is a controllable variable and is dependent on substrate temperature. The applicant also states that the Nulman reference is directed to the deposition of semiconductor devices, and the Shiroishi et al. reference is directed to providing a magnetic recording medium, and any modification of the transparent laminate of Anzaki et al. with the materials taught by Nulman and Shiroishi would destroy the intended purpose of the laminate of Anzaki et al. In response, the examiner has not stated or argued that it would have been obvious to utilize the materials taught by either Nulman or Shiroishi in the transparent laminate of Anzaki et al. The Nulman and Shiroishi references have simply been cited to show that the deposition rate in a sputtering process is an important processing characteristic and can be determined experimentally.
8. Seventh, the applicant again attempts to rebut the *prima facie* case of obviousness by showing the criticality of / unexpected results for the claimed substrate

temperature range of 340 K to 390 K, as recited in independent Claims 13 and 14. This argument has been fully addressed by the examiner above in paragraph 25.

9. Eighth, the applicant argues that the inventors control the deposition rate to avoid the creation of islands (e.g., of silver material) that are shaped like spheres, while the thickness of the silver film of Anzaki et al. is controlled to provide adequate electromagnetic shielding and near infrared shielding properties. The applicant then states that the combination of references would not provide the results which are achieved by the present invention. In response, the statement that the combination of references would not provide the results (i.e., the lack of creation of islands of silver material) which are achieved by the applicant's invention appears to be speculation on the part of the applicant and is not supported by any evidence of record. In fact, Anzaki et al. does not mention or teach that any islands of silver material are formed during the sputtering process.

10. Ninth, the applicant makes several arguments in section "D" of the remarks that parallel the arguments made by the applicant in previous sections. As such, these arguments have been fully addressed by the examiner in the paragraphs above.

11. Tenth, the applicant argues that the Okamura et al. reference and the Kenzo et al. reference would not have been combined as alleged by the examiner because the references are directed to completely different matters and problems. In response, the examiner disagrees. Both Okamura et al. and Kenzo et al. are drawn to methods of sputtering a silver thin film between layers of a transparent conductive film. These are similar matters, not different matters as alleged by the applicant.

12. Eleventh, the applicant argues that there is no motivation or suggestion to combine the Okamura et al. and Kenzo et al. references because there is nothing within either of the references which teaches or suggests that the deposition of the silver film as disclosed by Okamura et al. is not successful. In other words, the applicant argues that there is no reason to modify the Okamura et al. reference to deposit the silver film at the conditions (i.e., temperature) disclosed by Kenzo et al. In response, the examiner disagrees. Okamura et al. are silent as to the substrate temperature during the deposition of the silver films in the sputtering process of their invention. Therefore, one of ordinary skill in the art would clearly have been motivated to search out and select an appropriate substrate temperature for sputter depositing a silver film in order to carry out the process of Okamura et al. Kenzo et al. teach a similar method of forming a transparent laminate by sandwiching a silver layer between two high refractive index oxide layers (paragraphs [0011], [0018], and Figure 1). The layers are all formed by a sputtering process (i.e., the same process taught by Okamura et al. to form the layers) (paragraph [0022]). In addition, Kenzo et al. teach that the sputtering process for forming all the layers (including the silver layer) is performed at a substrate temperature between room temperature and 180° C (paragraph [0022]). In other words, Kenzo et al. teach a substrate temperature that can be successfully utilized in the sputter deposition of a silver film, and one of ordinary skill in the art would have been motivated to use such a substrate temperature in the process of Okamura et al. due to the lack of guidance provided in Okamura et al. regarding substrate temperature. The fact that the temperature

disclosed by Kenzo et al. is chosen to "secure etching fitness" does not change or take away from the fact that such a substrate temperature can be successfully utilized in the sputter deposition of a silver film, a process that Okamura et al. desires to carry out.

13. Twelfth, the applicant again attempts to rebut the *prima facie* case of obviousness by showing the criticality of / unexpected results for the claimed substrate temperature range of 340 K to 390 K, as recited in independent Claims 13 and 14. In response, the examiner notes that the prior art, specifically Kenzo et al., teaches a substrate temperature of from room temperature to 180° C, a range that completely encompasses the applicant's claimed temperature range. Further, the examiner notes that, in order to rebut a *prima facie* case of obviousness by establishing criticality / unexpected results, the results (i.e., the evidence of non-obviousness) must be commensurate in scope with the claims which the evidence is offered to support (See MPEP 716.02(d); *In re Clemens*, 206 USPQ 289, 296 (CCPA 1980); and *In re Grasselli*, 218 USPQ 769, 777 (Fed. Cir. 1983)). This is not the case in the instant application. For further explanation, please see paragraph 25 above.

14. Thirteenth, the applicant argues that the Okamura et al. reference and the Kenzo et al. reference would not have been combined as alleged by the examiner because the references are directed to completely different matters and problems. In response, the examiner disagrees. Both Okamura et al. and Kenzo et al. are drawn to methods of sputtering a silver thin film between layers of a transparent conductive film. These are similar matters, not different matters as alleged by the applicant.

15. Fourteenth, the applicant argues that Okamura et al. would not have been combined with Noreika et al., Nulman, and/or Shiroishi et al. because the references are directed to completely different matters and problems. Specifically, the applicant states that the Noreika et al. reference is directed to the formation of semiconductor materials for use with microwave devices, and including such materials in the transparent laminate of Okamura et al. would destroy the intended purpose of the laminate (i.e., render it non-transparent). In response, the examiner has not stated or argued that it would have been obvious to utilize the semiconductor materials of Noreika et al. in the transparent laminate of Okamura et al. Noreika et al. has simply been cited by the examiner to show that the deposition rate in a sputtering process is a controllable variable and is dependent on substrate temperature. The applicant also states that the Nulman reference is directed to the deposition of semiconductor devices, and the Shiroishi et al. reference is directed to providing a magnetic recording medium, and any modification of the transparent laminate of Okamura et al. with the materials taught by Nulman and Shiroishi would destroy the intended purpose of the laminate of Okamura et al. In response, the examiner has not stated or argued that it would have been obvious to utilize the materials taught by either Nulman or Shiroishi in the transparent laminate of Okamura et al. The Nulman and Shiroishi references have simply been cited to show that the deposition rate in a sputtering process is an important processing characteristic and can be determined experimentally.

16. Fifteenth, the applicant argues that the inventors control the deposition rate to avoid the creation of islands (e.g., of silver material) that are shaped like spheres, while the thickness of the silver film of Okamura et al. is controlled to achieve correct electrical conductivity and optical properties (i.e., transparency). The applicant then states that the combination of references would not provide the results that are achieved by the present invention. In response, the statement that the combination of references would not provide the results (i.e., the lack of creation of islands of silver material) which are achieved by the applicant's invention appears to be speculation on the part of the applicant and is not supported by any evidence of record. In fact, Okamura et al. does not mention or teach that any islands of silver material are formed during the sputtering process, and Okamura et al.'s teaching that the silver film has the correct electrical conductivity and optical properties (i.e., transparency) at least suggests that such islands are not formed – if they were, the film would not have the desired electrical conductivity due to the discontinuous nature of the islanded-silver film.
17. Sixteenth, the applicant again attempts to rebut the *prima facie* case of obviousness by showing the criticality of / unexpected results for the claimed substrate temperature range of 340 K to 390 K, as recited in independent Claims 13 and 14. This argument has been fully addressed in the paragraphs above (see paragraphs 25 and 36 above).
18. Seventeenth and in response to the applicant's arguments presented in section "G" of the remarks, the examiner notes that, in order to rebut a *prima facie* case of

obviousness by establishing criticality / unexpected results, the results (i.e., the evidence of non-obviousness) must be commensurate in scope with the claims which the evidence is offered to support (See MPEP 716.02(d); *In re Clemens*, 206 USPQ 289, 296 (CCPA 1980); and *In re Grasselli*, 218 USPQ 769, 777 (Fed. Cir. 1983)). This is not the case in the instant application. First, the examiner notes that samples (1) – (4) were produced using temperatures within the applicant's claimed range, while samples (5) – (8) were produced using temperatures outside the applicant's claimed range. However, the lowest temperature tested within the applicant's claimed range was 353 K (sample (2)). Temperatures tested below 353 K include 333 K (sample (5)) and 303 K (sample (6)), both of which are outside the applicant's claimed range. As such, why is 340 K the critical low-end cutoff point for substrate temperatures? The examiner notes that the low end of the claimed range (i.e., 340 K) is much closer to 333 K (i.e., a temperature which gives undesirable results according to the applicant) than to 353 K (i.e., a temperature which gives desirable results according to the applicant). As such, how does the applicant know that temperatures between 340 K and 353 K give the desired results (i.e., are "critical")? Therefore, this showing of criticality / unexpected results is not commensurate in scope with the claims of the instant application. Second, the examiner notes that independent Claims 13 – 14 are drawn to depositing the silver films by any vacuum dry process (e.g., vacuum vapor deposition, ion plating, sputtering), while the results shown in samples (1) – (8) were obtained using a sputtering method only (see page 26 of the applicant's specification). Thus, the

results are not commensurate in scope with the claims. Third, the examiner notes that independent Claims 13 – 14 are open to a number of different silver-containing films, such as silver and one member or two or more members selected from the group consisting of gold, copper, palladium, platinum, manganese, and cadmium (see pages 20 – 21 of the applicant's specification and page 11 of the applicant's remarks filed on 4/29/2002), while the results shown in samples (1) – (8) were obtained using only silver containing 5% by weight of gold (see page 25, line 25, and page 26, lines 1 – 3 of the applicant's specification). Therefore, the results are not commensurate in scope with the claims. Fourth, the applicant's claims are open to any number of combination thin film layers greater than or equal to three so long as a transparent laminate is produced, while the results shown in samples (1) – (8) were only obtained for three combination thin film layers. Thus, the results are not commensurate in scope with the claims. The applicant argues that, because they have never argued the criticality of a sputtering process over other vacuum dry processes and the criticality of the particular silver-containing film over silver-containing films in general, the specification fully complies with 35 U.S.C. 112 and it is irrelevant whether or not the claim scope is broader than the processes described in the specification. In response, the examiner strongly disagrees with the applicant's statement that it is irrelevant whether or not the claim scope is broader than the processes described in the specification. In this case, it is extremely relevant. The applicant relies upon the processes described in the specification to show "unexpected results". The claims must be commensurate in scope with the showing

of unexpected results, and therefore commensurate in scope with the processes described in the specification used to show the unexpected results. How does the applicant know that the claimed temperature range is critical for vacuum dry processes other than sputtering? How does the applicant know that the claimed temperature range is critical for different alloys of silver than the one tested? The applicant has provided no data to support a showing of unexpected results commensurate in scope with the claims. Contrary to the applicant's statement that the examiner is improperly extending the requirements of a showing of criticality as to a claimed range to other features of the claims, the examiner is only stating that, in order to establish the criticality of a claimed range, the claims must be commensurate in scope with the results, and therefore the process used to obtain the results, used to support the criticality of the range.

Conclusion

The examiner notes that the incorporation of the limitations of (1) Claims 23 and 24 into independent Claim 13, and (2) Claims 26 and 27 into independent Claim 14 may be sufficient to render the claims of the instant applicant commensurate in scope with the showing of unexpected results, thereby making the claims allowable. However, such an amendment may require further search and/or consideration on the part of the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley D Markham whose telephone number is (571)

272-1422. The examiner can normally be reached on Monday - Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Wesley D Markham
Examiner
Art Unit 1762

WDM

SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700